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ABSTRACT

The evaluation system described in this paper represents an attempt to provide objective, current, and course-specific evaluation of liberal education at Marycrest College, Iowa. This evaluation system uses a questionnaire to assess student perceptions of individual courses in relation to a set of general educational objectives determined by the college faculty. Results are then represented in a matrix which provides a pictorial summary of the total program's performance. Particular strengths and weaknesses can then become apparent: specific objectives are or are not strongly perceived as met; and particular courses are or are not perceived as living up to the teachers' expectations or to the program's needs. Specific recommendations can then be made with some empirical basis (though cautiously, since the questionnaire measures perceptions), and subsequent success or failure in improving course or program effectiveness can be empirically assessed. (BW)

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EVALUATING GENERAL EDUCATION:

An Empirical Method for Current Course and Program Assessment.

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A brief survey of college catalogs shows that colleges often pride themselves as providers of quality liberal education. But such a flattering self-description becomes really meaningful only when it can be documented. Otherwise the lofty goals expressed in college catalogs can appear as mere rhetoric.

Faculty at Marycrest College, Iowa, have developed an innovative method for evaluating general education. The evaluation system described in this paper represents an attempt to provide objective, current, and course-specific evaluation of liberal education at Marycrest--a step toward documenting and thereby assuring the quality of liberal education at this liberal arts college.

This evaluation system uses a questionnaire to assess student perceptions of individual courses in relation to a set of general education objectives determined by the college faculty. Results are then represented in a matrix which provides a pictorial summary of the total program's performance. Particular strengths and weaknesses can then become apparent: specific objectives are or are not strongly perceived as met; particular courses are or are

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not perceived as living up to the teachers' expectations or to the program's needs. Specific recommendations can then be made with some empirical basis (though cautiously, since the questionnaire measures perceptions), and subsequent success or failure in improving course or program effectiveness can be empirically assessed.

Efforts to find a more effective approach to general education at Marycrest College began in 1978. That summer, through a Mellon Foundation grant administered by University House of the University of Iowa, a Marycrest faculty member organized a team of ten faculty representing five Iowa independent colleges in order to research options for general education. The work of this team resulted in a 115-page report entitled Five Colleges Look at General Education (ERIC: ED 168 434).

Throughout this time, Marycrest's general education program has consisted of distribution requirements over eight areas. Three of these areas concern basic skills (written communication, oral communication, and mathematics) in which all students must demonstrate competency. The remaining five areas are distinguished by modes of knowledge: Philosophy and Religious Studies, Language and Literature, Natural Science and Mathematics, Social and Behavioral Sciences, and Fine Arts/Performing Arts.

During the academic year 1979-80, a committee was formed of six faculty (one from each of the college's academic divisions) and two students in order to study the Five Colleges report and to evaluate our general education program in relation to it. This committee conducted a dialogue among Marycrest faculty and students concerning the nature and goals first of liberal education and then

of general education at Marycrest.

Out of that dialogue, a set of fourteen goals for general education emerged. Faculty then set an order of priority among these goals, with student opinions incorporated into the process. In order, from goals considered most essential to those considered least essential, these goals are:

1. Cultivation of basic academic skills.
2. Contribution to a common body of knowledge that would lay the groundwork and provide the requisite knowledge for further learning.
3. Promoting and encouraging the highest levels of critical thinking, i.e. analysis, synthesis, and evaluation.
4. Enhancement of physical, emotional, social and spiritual development of the person.
5. Facilitation of the integration of various disciplines.
6. Development of skills in critical reading and listening.
7. Distribution over the liberal arts disciplines.
8. Development of an overview of the methods and assumptions of a given discipline.
9. Providing skills or information that will be of continuing value.
10. Fostering the awareness and the practical application of values.
11. Challenging the student to articulate his or her own values and assumptions.
12. Development of an awareness of social institutions and political forces.
13. Development of an overview of the contents of a subject

area.

14. Fostering appreciation of the subject matter and the discipline.

One of the above goals, 7: "distribution over the liberal arts disciplines," applies not to individual courses but only to the whole general education program. Therefore, while retaining that goal as a basis for evaluating the program, the committee removed it as a criterion for evaluating individual courses, thus leaving thirteen goals.

During the academic year 1980-81, the committee developed a questionnaire by subdividing each of those thirteen goals into specific objectives, and then developing a question to address each objective. The result was a manageable thirty-two item questionnaire using a five-option Likert scale (see appendix). The questionnaire took approximately ten minutes of class time to administer.

To illustrate, the first goal, "cultivation of basic academic skills," was subdivided into six objectives which were randomly distributed throughout the thirty-two item questionnaire: Does this course #3) help me to read more intelligently; #11) help me to speak effectively in a group; #14) make me more able to take a stand on an issue and to find evidence to support that stand; #28) develop my ability to write clearly and effectively; #30) develop my mathematical ability; #32) make me more able to find information on a topic and to express it in an orderly way. The five rating options on the scale were 4) a PRIMARY objective of the course; 3) an IMPORTANT objective of the course; 2) and OCCASIONAL part of the course; 1) an INCIDENTAL part of the course; 0) not at all.

This questionnaire was administered in all courses which could be taken to fulfill general education requirements over a period of three semesters, a total of 58 courses.

The committee then developed a matrix in order to organize the data from individual courses into a form useful for evaluating the present general education program as a whole, and useful for future curricular planning. The matrix was organized as a grid with the objectives (arranged in the order of their priority) listed across the top and with the 58 courses evaluated (coded to preserve anonymity) listed along the left column. The mean of student ratings for each objective in each course was then recorded in the appropriate cell of the matrix. As an aid to interpreting the data, if a mean rating for a given course on a specific objective ranked in the top 25% of all courses attempting to meet that objective, an asterisk was placed in the cell. And if a course was rated at 3.0 or higher on a specific objective (indicating that students perceived this as an important course objective), the corner of the cell was shaded.

Figure 1

Means were computed for each course across all objectives, for each objective across all courses, and for each goal across all objectives comprising that goal. The means for each objective across all courses were limited in their usefulness, however, because an objective such as "develop my mathematical ability" could appear to be very weak (the overall mean for that was 0.93),

	Goal 1					Goal 2			Goal 3				
	objectives												
Course	3	11	14	28	30	32	4	17	2	10			mean for course
AA	2.8	1.2	1.5	1.0	3.8	1.4	3.0	2.6	2.8				1.8
AB	2.6	2.3	1.8	2.6	0.7	2.1	2.7	2.3	2.				1.9
AC	2.0	0.8	1.5	0.9	0.5	1.4	3.2						2.5
AD	3.6	2.0	2.0	3.0	0.1								2.8
AE	3.8	2.4	2.6	3.5									3.0

CD	2.1	0.9	2.5	0.6	0.9	1.6						1.7
CE	1.7	0.3	1.4	0.6	0.3	2.0						1.7
CF	1.8	0.1	0.8	0.3	0.4	1.1						2.2
mean for all	2.4	1.4	2.2	2.0	0.9	2.2	3.0					

mean for
goal

1.9

Figure 1: organization of the matrix

but can be met effectively in just a few courses. Likewise, the mean figures for each course across all objectives may be misleading because a course could appear weak at first glance (a mathematics course had an overall mean of 1.8), but may be rated highly for those particular objectives appropriate to that course (such as "develop my mathematical ability," "help me develop confidence in my ability to think," and "teach me to use the methods of this academic field").

The critical issue for evaluating the general education program as a whole was to determine that each objective is rated highly in a sufficient number of courses. A quick glance down each column while attending to shaded cell corners provides basic information on this issue. In the preliminary review of the data, the cluster of objectives related to goal 4, "enhancement of physical, emotional, social and spiritual development of the person," had relatively few courses rated at 3.0 or above, indicating a direction for curriculum development. One objective under this goal, "contribute to my physical well-being," showed no courses with a rating higher than 2.3. As a result, adding a new course requirement in health or physical education was given serious consideration.

A second comparable matrix was constructed depicting the perceptions of the same objectives for the same courses by the respective faculty. The coded matrices were then made available to the college community, and department heads were provided with the codes for the courses within their respective disciplines. The General Education Committee and the college Curriculum Committee, which includes the academic dean, were given the complete uncoded

information.

The information provided by these two matrices could then be readily compared for purposes of assessing the correlation (or lack thereof) between student and faculty perceptions of course effectiveness:

Figure 2

An instructive pattern often appeared. In some courses (particularly those rated highly on many objectives by students), faculty and student perceptions corresponded rather closely on most objectives. But in other courses, faculty and student perceptions differed dramatically.

The data so organized, therefore, provided several useful forms of assessment for individual courses and for the general education program as a whole. First, the faculty member can obtain quantitative information on student perceptions of course effectiveness in meeting each of the thirty-two objectives relative to his or her own perceptions. The faculty member can thereby assess with some objectivity the relative strengths and weaknesses of his or her course vis a vis the objectives of general education. Individual faculty members then have an empirical guide in their efforts to revise and improve their courses and teaching methods.

Second, the effectiveness of a particular course on each objective can be assessed relative to other courses. This may be done by comparing the rating for each objective with the mean score for that objective across all courses, or simply by noting whether an asterisk appears in a given cell. For instance, a rather low

Figure 2:

Adapted matrix showing relation between faculty and student perceptions.
(Row marked S: students; marked F: faculty.)

score of 1.8 for course BM on objective 15, "contribute to my physical well-being," turns out to be in the top 25% of all courses for that objective--some evidence at least for course effectiveness when compared to the ratings of other courses attempting to meet the same objective.

Third, the effectiveness of courses can be assessed in relation to an absolute standard by comparing the course rating for each objective with the numerical values of the scale used in the questionnaire. For instance, course AA received a rating of 3.8 (on a scale ranging from 4 to 0) for objective 30, "develop my mathematical ability"--strong evidence for course effectiveness when considered in the light of the absolute maximum scale value. (This form of assessment, however, only becomes meaningful when viewed in conjunction with the instructor's own rating of each course objective.)

Fourth, the particular courses within the general education curriculum which most effectively meet each objective (the top 25%) can be readily identified by attending to the scores marked by asterisks in the column under a given objective.

Fifth, whether and how extensively the curriculum is effectively meeting certain objectives (according to the absolute criterion 3.0 or above) can be determined by attending to cells with shaded corners in the column under a given objective.

One reassuring element in the data gathered over the three semesters came from courses which were evaluated two or three times. While the absolute ratings varied slightly from occasion to occasion, the relative ratings of objectives (i.e. their rank across different courses) remained consistent, suggesting that the

questionnaire is a reliable instrument for assessing students' course perceptions.

During Academic Year 1982 - 1983, the general education committee conducted a qualitative analysis of data gathered from student and faculty questionnaires completed in the 1981 - 1982 academic year. The committee addressed two research questions:

1. To what extent are the general education criteria met by the general education courses?
2. To what extent is there agreement between students and faculty concerning how the general education courses met the suggested general education criteria?

In order to address the first research question, results from the questionnaire were grouped into each of the college's eight areas comprising the general education distribution configuration: written communication, oral communication, mathematics, philosophy and religious studies, languages and literature, natural sciences, social and behavioral sciences, and the arts. When grouped in this manner, the strengths and weaknesses of the general education curriculum could be identified readily according to each of the areas of the general education configuration. The results were reported in a table with the eight areas listed across the top and the objectives of general education, grouped according to the thirteen criteria in order of priority, listed at the left:

Figure 3

Figure 3

General Education Criterion
and Mean Ratings by Students

	Written Communication	Oral Communication	Mathematics	Philosophy/ Religious Studies	Language/ Literature	Natural Science/ Mathematics	Social/Behavioral	The Arts	All General Education Courses
1. Criterion: Cultivation of basic academic skills									
#3 Read more intelligently.....	3.1	2.4	2.8	3.0	3.5	2.1	2.3	0.9	2.4
#11 Speak more effectively	2.1	3.7	1.2	1.9	2.6	1.0	1.4	0.4	
#14 Find evidence and take a stand on an issue	2.6	3.4	1.5	2.9	2.0	1.7	2.6		
#28 Write clearly and effectively.....	3.6	2.1	1.0	2.5	2.8	1.1			
#30 Develop math ability	0.3	.77	3.8	0.4	0				
#32 Find information and express in an orderly way	3.4	3.3	1						
2. Criterion: Contribution to a common body of knowledge that would lay the groundwork and provide the needed prerequisite knowledge for further learning									
#4 Provide knowledge that I can build later by reading or experience of school.....									
#17 Provide me knowledge that to me as a background other courses..									
3. Criterion: P									
#2 Do									

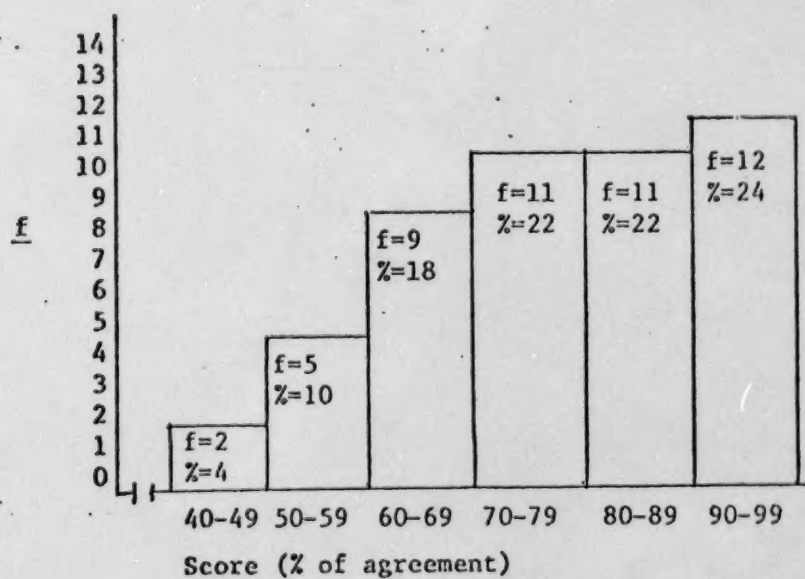
In order to address the second research question, "to what extent is there agreement between students and faculty concerning how the general education courses met the suggested general education criteria," the average ratings of students on each of the items from the questionnaires were compared to the ratings by faculty members who taught the courses, as in figure 2. Then the relation between faculty and student perceptions was calculated for each course, considering a difference of less than one point an agreement, of one point or more a disagreement. For example, take the two courses illustrated in figure 2 above: the relation for course AQ was .50, that for course BM, .88. A graph was composed to show the overall pattern of relation, revealing a very high degree of agreement between faculty and student perceptions of course performance in relation to the objectives of general education:

Figure 4

Based on the data and on a qualitative interpretation of these data, the general education committee recognized the positive performance of the general education curriculum overall, and offered several recommendations. In summary form, the recommendations suggest enhancement of the general education curriculum in relation to the fourth criterion, aspects of personal development, and to the ninth criterion, value awareness; cooperation of faculty of all disciplines in developing communications skills; inclusion in the questionnaire of objectives touching aesthetic awareness and multicultural perspective; and a

Fig. 4

Frequency of percent of agreement between student and faculty perceptions of course performance in relation to general education objectives.



$$n = 50$$

$$\bar{x} = .77$$

$$sd = .14$$

<u>x</u>	<u>f</u>
90-99	12
80-89	11
70-79	11
60-69	9
50-59	5
40-49	2
	50

Evaluation Questionnaire for General Education Courses

Please put an X through the number reflecting your feelings in relation to the question:

- 4 = primary objective of this course
 3 = important objective of this course
 2 = occasional part of this course
 1 = incidental part of this course
 0 = not at all

Does this course:

- 4 3 2 1 0 1. Help me to develop a general understanding of the world in which I live? (5)*
- 4 3 2 1 0 2. Develop my ability to come up with general ideas which can make sense of specific items of information? (3)
- 4 3 2 1 0 3. Help me to read more intelligently? (1)
- 4 3 2 1 0 4. Give me knowledge that I can build on later by reading or experience outside of school? (2)
- 4 3 2 1 0 5. Give me a general idea of the academic field it is in? (e.g., (13) Chemistry, Philosophy, English Literature)
- 4 3 2 1 0 6. Give me knowledge or skills that I will need in the future? (9)
- 4 3 2 1 0 7. Show me how to, or "give me a basis for keeping up with" new information and changes? (9)
- 4 3 2 1 0 8. Assist me in developing social skills? (4)
- 4 3 2 1 0 9. Help me listen more carefully and critically to what others say? (6)
- 4 3 2 1 0 10. Help me to be able to evaluate ideas in relation to an established standard? (3)
- 4 3 2 1 0 11. Help me to speak effectively in a group? (1)
- 4 3 2 1 0 12. Make me aware of how social institutions work? (12)
- 4 3 2 1 0 13. Help my emotional growth? (development?) (4)
- 4 3 2 1 0 14. Make me more able to take a stand on an issue and to find evidence to support that stand? (1)
- 4 3 2 1 0 15. Contribute to my physical well being? (4)
- 4 3 2 1 0 16. Develop my ability to see and examine the various parts or aspects of an issue? (3)
- 4 3 2 1 0 17. Give me knowledge that is important to me as a background for understanding other courses? (2)
- 4 3 2 1 0 18. Help me to develop confidence in my ability to think? (4)

*Circled numbers identify the goal which the objective specifies.

- 4 3 2 1 0 19. Help me to appreciate the academic field it is in? (e.g., Biology, Sociology, etc.) (14)
- 4 3 2 1 0 20. Help me to become aware of my own values and to see things that I usually take for granted? (11)
- 4 3 2 1 0 21. Help me to see the connections between its subject matter and other areas of study? (5)
- 4 3 2 1 0 22. Help me to think on my own, rather than just memorizing others' ideas? (3)
- 4 3 2 1 0 23. Help me to develop a sense of what is true and good? (4)
- 4 3 2 1 0 24. Challenge me to relate what is learned to my personal values? (10)
- 4 3 2 1 0 25. Make me aware of how political forces operate? (12)
- 4 3 2 1 0 26. Help me to understand spiritual ideas and values? (4)
- 4 3 2 1 0 27. Develop connections among ideas and things? (3)
- 4 3 2 1 0 28. Develop my ability to write clearly and effectively? (1)
- 4 3 2 1 0 29. Challenge me to apply what is learned to my personal life choices? (10)
- 4 3 2 1 0 30. Develop my mathematical ability? (1)
- 4 3 2 1 0 31. Teach me how to use the key ideas and methods of this academic field? (8)
- 4 3 2 1 0 32. Make me more able to find information on a topic and to express it in an orderly way? (1)